Heretofore, the Board of Medical Examiners of the State of California has held a view contrary to that expressed by the Supreme Court, although it has not made any arrests to test out its interpretation.

The Supreme Court's opinion covers some of the major points at issue. Unless a petition for a rehearing is presented and granted, and the opinion reversed, the court's interpretation of the Medical Practice Act, on the giving of anesthetics by nurses, will stand as law in California.*

Other State Association and Component County Society News.—Additional news concerning the activities and work of the California Medical Association and its component county medical societies is printed in this issue, commencing on page 522.

EDITORIAL COMMENT†

TOLERANCE TO COD-LIVER OIL—U. S. P. X§

Recently, interest has been focused on the use of large amounts of vitamin D in the treatment of chronic disease states.[1] Leake [2] has emphasized the dangers of such therapy, since deaths have followed the use of irradiated ergosterol [3] and cod-liver oil.[4] The present case is reported as an instance of overdosage (10 liters of unirradiated Cod-Liver Oil—U. S. P. X), in which no symptoms or signs of toxicity were noted, though a derangement of mineral and carbohydrate metabolism was observed, which was believed due to the uncontrolled self-medication.

A woman of twenty-five years, weighing 55 kilos, took an average of 100 cubic centimeters of Cod-Liver Oil—U. S. P. X and a quart of cow's milk daily to gain weight. After three and one-half months she had gained 11 kilos, at which time she stopped taking the oil but continued the milk intake in the same amount. One month later, on examination she was found symptom-free and without physical signs referable to vitamin A or D toxicity. Laboratory examinations of blood, clotting time, complement fixation, urine, phenolsulphonephthalein excretion, and basal metabolism were within normal limits. An electrocardiographic tracing showed no abnormal changes.[5] Blood cholesterol was 194.6 milligrams per cent, calcium 9.0 milligrams per 100 cubic centimeters, and phosphorus 5.6 milligrams per cent.[6] Analysis of a twenty-four-hour urine specimen revealed 0.25 grams of calcium and 1.281 grams of phosphorus in 1,810 cubic centimeters.[7] The parathormone titer, determined by the method of Hamilton,[8] was within the normal range. A test of tolerance to 100 grams of glucose given orally after a twelve-hour fast showed the following concentrations over the four-hour period: 79, 80, 80, 88, and 79 milligrams per 100 cubic centimeters, without glycosuria. Roentgen examination of the skull showed no changes in bone density or evidence of demineralization as compared with roentgenograms taken four years previously.

COMMENT

With the exception of the abnormal response to glucose ingestion, no damage following the excessive daily intake of 100 cubic centimeters of Cod-Liver Oil—U. S. P. X over a hundred-day period was evident, so far as our examination disclosed. The disturbed tolerance noted might be due to a more rapid utilization of glucose by the tissues or to more prompt glycogen formation. The normal calcium and elevated phosphorus blood levels apparently indicate that rapid excretion of these minerals by normally functioning kidneys occurred with no evidence of demineralization of the bones being apparent. The excess excretion of calcium and phosphorus observed is thought by Thatcher [3] to be due to undue stimulation of the calcium phosphorus metabolism by strong concentrations of vitamin D given over a relatively long period, the calcium being lost instead of utilized. The rise in blood phosphorus without a corresponding hypercalcemia noted in our case is considered by Thatcher [4] to be evidence of vitamin D toxicity. This is the first clinical demonstration, so far as we can determine, of deranged mineral metabolism under these circumstances. Four or five times the recommended daily dose of cod-liver oil may be taken, then, on the basis of these findings, with disturbance of mineral balance, but without symptoms or physical signs of dysfunction. In cases suspected of vitamin D toxicity, an examination of the blood and urine for calcium and phosphorus should be helpful in early diagnosis.

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*At Coronado the House of Delegates and the Council instructed General Counsel Peart to make request of the Supreme Court for a rehearing. The Board of Medical Examiners of the State of California has also petitioned Attorney-General Webb to join in the case as *amicus curiae*.

† This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

§ From the laboratory of Dr. Alfred C. Reed and the pharmacological laboratory of the University of California Medical School, San Francisco.

1 Dreyer, I., and Reed, C. I.: Arch. Phys. Therapy, 16:537 (Sept.), 1935. Vrtiak, E. G., and Lang, R. S.: J. A. M. A., 106:1162 (April 4), 1936.

2 Leake, C. D.: Calif. and West. Med., 44:149 (March), 1936.

3 Thatcher, L.: Edinburgh M. J., 38:457 (August), 1931.

4 Thatcher, L.: Lancet, 230:20 (January 4), 1936.

5 Kindness of Dr. Francis Rochex.

6 Kindness of Dr. Zera Bolin.

7 Kindness of Dr. May Olney and Dr. A. S. Mulay.

8 Hamilton, Bengt, and Schwartz, C.: J. Pharmacol. and Exper. Therap., 46:285 (November), 1932.

‡ The authors are indebted, for technical assistance, to Mrs. Media Orem Dahl.